Matrix 1: San Joaquin Valley Growth Response Study, PHASE II Modeling Screening Summary and Phase III Follow-up

Key to Numerical Evaluation. 0 = no 1 = somewhat; 2 = definitely

Candidate Model By Model Type	1. Planning Support		2. Capability				3. Utility for COGs,			Other Key Factors for Fresno Pilot Study	Con-sultants reviewing 1-letter abbrev.
	a. Stake-holder Involve-ment	b. Region al-scale model	a. Policy testing	b. Linkage to TP+	c. Environ-mental impacts	d. GIS inter-face	a. Data needs & availability	b. Resource needs & availability	c. Success-ful use, esp. in CA	a. Cost, and Other Acquisition Issues	
I. LAND USE ALLOCATION MODELS											
METROSIM (12)	0	2	2	2	2	2	1	0	1	$33 to 43k plus $5-10k per year maintenance (per EPA)	E,C,L
Treas. Valley* (14)	1	2	1	2	1	2	2	2	1	Min. investment in software, but time consuming process	E,C
UPLAN (15)	1	2	2	2	2	2	2	1	1	Software free, developer may need to calibrate	E,C,L
What If? (15)	1	2	2	2	2	2	2	2	0	$3k-$6k (5 sites)	E,C
PECAS (10)**	0	2	2	2	2	2	0	0	0	Expensive, could be over $200k, and additional data needs are costly	E,C,L
II. VISUALIZATION & INDICATOR REPORTING MODELS											
PLACE^{3}S (13)	2	1	1	1	2	2	1	1+	2	Public Domain but needs support	Team
Web-basedPLACE^{3}S (14+)	2	2	1+	2	2	2	1+	1+	1	$40k	Team
CommunityViz (12)	2	1	1	0+	2	2	2	2	0	$5k	Team
SmartGrowthINDEX (14)	2	1	1	2	2	2	2	1	1	Public Domain but needs support	Team
PlanBuilder INDEX (15)	2	2	1	2	2	2	2	1	1	?	Team
EnvisionQUEST(13)	2	2	2	1	2	2	1	1	0	$150k per D. Biggs, Developer	Team

Matrix 2: PHASE III: Modeling Screening for City of Fresno Application – Qualitative Aspects and Contacts

Candidate Model By Model Type	Comments/Status of Investigation	Sources of Information (Suppliers and USERS)	Consultant Re-viewing
I. LAND USE ALLOCATION MODELS			
MEPLAN	SACOG has used MEPLAN, but is moving toward PECAS.	SACOG	E,C,L
METROSIM	METROSIM is an early microsimulation model, based on the economic choices of households/ individuals. It has been superceded by more recent microsimulation models; see PECAS. Primary uses in New York and Chicago regions. **Fatal Flaw**: Data and calibration requirements create high cost and long set-up time.	Alex Anas & Associates, / NYC Region and Chicago	E,C,L
TreasureValley	Treasure Valley is a rules-based model, where land uses are allocated based on existing land use clusters (gravity), vacant land development opportunities, and a measure of transportation accessibility. The relative weighting of the three factors was based on a regression analysis of historical data. The model has been used to generate baseline growth projections. It is a spreadsheet model built, with an open architecture and no built-in assumptions. Running alternative scenarios is less automated than with other models, and the model is untested with respect to testing different policy scenarios.	Reid Ewing, Spatial Dynamics, F&P, Strategic Economics, CD+A / Boise, Idaho	E,C
UPLAN	UPLAN is a rules-based model, where land uses are allocated based on inputs concerning permitted development by subarea and the weighting of each subarea based on transportation accessibility; some additional allocation criteria can be added. The basic model does not incorporate any economic factors. A copy of the model has been examined. This is a promising model that appears suitable for SJV Phase III when operated in concert with economic/ land use side analyses. The model developer may need to be involved in initial model calibration.	R. Johnston, D. Shabazian/ Merced, SACOG, & New Mexico	E,C
What If?	Works with CommunityViz, SGI, and other indicator models as a "rule-based" LU allocation model. Limitation of up to 18 land use categories (will be 80 in new version due in Summer 2003. Website is illustrative of a more 'professional' demeanor of this software developer. A simpler, but more transparent alternative to UPLAN.	http://what-if-pss.com R. Klosterman, Hudson, OH / several other communities in OH; no CA users.	E,C, F
PECAS	PECAS marries microsimulation and Lowry-type (gravity) spatial interaction components. It is based on utility functions that define the economic choices of all actors, households and businesses. SACOG is moving toward PECAS. PECAS is a new model that has not been fully applied anywhere. **Fatal Flaw**: Data and calibration requirements create high cost and long set-up time.	John Hunt / SACOG and SCAG	E,C,L

Matrix 2: PHASE III: Modeling Screening for City of Fresno Application – Qualitative Aspects, Comments and Status

Candidate Model By Model Type	Comments	Sources of Information (Suppliers and USERS)	Consultant Reviewing
II. VISUALIZATION & INDICATOR REPORTING MODELS			
PLACE3S -desktop	Desk-top version appears labor, time and expertise intensive; good base of experience in CA.	CA Energy Commission Dave Shabazian, SLOCOG Michael Clay, UC-Davis	Team
PLACE3S Web-based	Uses data base software and web linkage to eliminate need for GIS-based calculations: GIS software not needed to display results. Can recalculate all indicators for 250,000 parcels in minutes. Built-in indicators comparable in scope to desktop; many more can be programmed. Requires Eco-Interactive support and participation. Per Don Hubbard, considerable additional program likely to be needed to develop a full array of indicators. At this point it performs primarily transportation calculations using a fixed network assumption. It does not show side-by-side comparisons of baseline land use relative to "scenarios", and does not produce pretty indicator graphics. Additional programming subsidization from Energy Commission or Caltrans HQ?	Ann Happel Eco-Interactive Nancy Hanson, CA Energy Commission: Mike McKeever, Dave Shabazian, SACOG	
CommunityViz	Developer contacted; no default formula for indicators, entirely user-specified; works with ArcView/ArcGIS; little application in CA or for regional scale analysis. Developer is interested in CA and rural issues; willing to do web-based demo after 5/26. Works with WhatIf? model.	www.communityviz.com Marcy Allen, CommunityViz Ken Snyder, Placematters.com	Team
Smart Growth INDEX (SGI) US EPA	Documentation collected; has 56 built-in indicators, plus potential for more. New Version 2.0 to be used in 14 communities beginning in mid-2003, including Merced region (MCAG lead agency). Land Use allocation and "4D" components now obsolete (now a Type II model). Works with WhatIf? model Most successful applications are Charleston SC and Wilmington DE. MCAG is not among "partners" according to Elliot Allen.	US EPA www.epa.gov/smartgrowth Charleston SC, Indianapolis	Team
INDEX	Per Ken Snyder, placematters.com, INDEX has longest track record, and would be choice if time constraints are primary consideration. Training and participation by Criterion is available. Produces all same indicators as SGI. Does over-the-network accessibility measurement. Based on ARCGIS (ArcVIEW successor). Cost: $3900. Real time "paint the town" capabilities from pallet of land use types and facility types. Houston study compared with PLACES and preferred INDEX.	Criterion: www.crit.com/ Sacto AQ Collaborative Ken Snyder, Placematters.com	
EnvisionQUEST	Looks good in demo; more regional in scope than CommunityViz; not deployed in CA, though eager to work in CA and SCAG may use. Very good research databases behind its models. Expensive; $150k	www.envisiontools.com/ Dave Biggs; J. Fregonese	Team

III. Notes on TRANSPORTATION (4-STEP) MODEL INTERFACE and			
4D Post-Process - refines Transit & NM demand estimates	Fehr and Peers has developed a number of spreadsheet based models that utilize 4-step model inputs and outputs to create more refined estimates of transit and non-motorized travel based on local & national data of how travelers respond to Density, Diversity (mixed LU) Design, & Destination proximity	Sacto AQ Collaborative, SACOG, MN Met Council	F
Transit Demand and Mode Choice models	New module of Council of Fresno County Governments (CF TP+ model; Documentation in preparation. Fehr and Peers has obtained 1998 documentation of original model split model by DKS Associates; Updated Mode split model has not yet been run by F	Mike Bitner, Sharri Ehlert, Mike Aronson	F